



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/085,568

02/27/2002

Anindya Basu

2-1-4-5-22

8992

7590

07/12/2006

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER

NGUYEN, TOAN D

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,568

Applicant(s)

BASU ET AL.

Examiner

Toan D. Nguyen

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,9-12,14,15 and 19-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4,5,11,12,14 and 15 is/are allowed.
- 6) ☒ Claim(s) 9,10,19-23 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 24 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. The indicated allowability of claims 9-10, 19-28 are withdrawn in view of the newly discovered reference(s) to Leinwan et al. (US 6,130,890) and Guerin et al. (US 2003/0072270). Rejections based on the newly cited reference(s) follow.

Claim Objections

2. Claim 10 is objected to because of the following informalities:

In claim 10 lines 1 and 2, it is suggested to change "a path" to --- the path ---.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2616

5. Claims 9-10, 19-21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Iwata (US 2002/0051449) in view of Leinwan et al. (US 6,130,890) further in view of Guerin et al. (US 2003/0072270).

For claims 9-10, Iwata discloses interdomain routing system, the method comprising the steps of:

receiving a first routing message from a peer router of said first router (figure 3, reference 140), the first routing message comprising a first path (figure 3, references AS-A(190), AS-x1 (200), AS-x2 (201), AS-B (192)) from the first autonomous system (figure 3, reference AS-A (190)) to a destination (figure 3, reference router 145 in AS-B (192)), the first path from the first autonomous system (figure 3, reference AS-A(190)) to the destination including a second autonomous system (figure 3, reference AS-B (192)), the second autonomous system being a next hop of said first path (page 7, paragraph [0160];

receiving a second routing message from a peer router of said first router, the second routing message comprising a second path from the first autonomous system to the destination (figure 3, references AS-A (190), AS-x3 (202), AS-x4 (203), AS-B (192)), the second path from the first autonomous system (figure 3, reference AS-A (190)) to the destination being different from the first path from the first autonomous system to the destination, the second autonomous system (figure 3, reference AS-B (192)) also being a next hop of said second path (page 7, paragraph [0160]; and

sending a third routing message to one or more internal peer routers of said

first router (figure 3, reference 140), said one or more internal peer routers comprised in said first autonomous system (figure 3, references AS-A (190)), the third routing message comprising at least both the first path from the first autonomous system to the destination (figure 3, references AS-A(190), AS-x1 (200), AS-x2 (201), AS-B (192)) and the second path from the first autonomous system to the destination (figure 3, references AS-A (190), AS-x3 (202), AS-x4 (203), AS-B (192)) (page 7, paragraph [0161]).

However, Iwata does not expressly disclose:

selecting a best path from said first router to said destination, said best path being selected from a set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message,

wherein said step of selecting the best path comprises:

initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message;

eliminating from the set of possible best paths any paths which include a route internal to said first autonomous system if there are any paths which do not include a route internal to said first autonomous system in said set of possible best paths;

removing from the set of possible best paths any paths that do not have a minimum value of an internal Gateway Protocol cost among the set of possible best paths; and

selecting, as the best path, a path that remains in said set of possible best paths after said eliminating step and said removing step.

In an analogous art, Leinwan et al. disclose:

selecting a best path from said first router to said destination, said best path being selected from a set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message (figure 1, reference 56, col. 7 lines 50-52),

wherein said step of selecting the best path comprises:

eliminating from the set of possible best paths any paths which include a route internal to said first autonomous system if there are any paths which do not include a route internal to said first autonomous system in said set of possible best paths (figure 2, reference step 54, col. 7 lines 40-42);

removing from the set of possible best paths any paths that do not have a minimum value of an internal Gateway Protocol cost among the set of possible best paths (figure 2, reference 56, col. 7 lines 50-52); and

selecting, as the best path, a path that remains in said set of possible best paths after said eliminating step and said removing step (figure 2, reference 56, col. 7 lines 50-52).

Leinwan et al. disclose wherein said step of selecting, as the best path, a path that remains in said set of possible best paths, comprises selecting a path based on a speaker-number value of a router from which said path was originated (col. 7 lines 47-52 as set forth in claim 10).

One skilled in the art would have recognized the selecting a best path from said first router to said destination, and would have applied Leinwan et al.'s selecting a routes for transferring a data packet from the source to the destination in lwata's network paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Leinwan et al.'s method and system for optimizing routing of data packets in lwata's interdomain routing system with the motivation being to select the shortest path (col. 7 lines 50-52).

Furthermore, lwata in view of Leinwan et al. does not expressly disclose initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message. In an analogous art, Guerin et al. disclose initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message (figure 3, reference 86, page 6, paragraph [0055] lines 2-3).

One skilled in the art would have recognized the initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message, and would have applied Guerin et al.'s initialization procedure in lwata's network paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Guerin et al.'s method and system for topology construction and path identification in a two-level routing domain operated according to

Art Unit: 2616

a simple link state routing protocol in Iwata's interdomain routing system with the motivation being to initialize set of paths from area entry points (page 6 paragraph [0055] lines 2-3).

For claims 19-20, Iwata discloses interdomain routing system, the method comprising the steps of:

means for receiving a first routing message from a peer router of said first router (figure 3, reference 140), the first routing message comprising a first path (figure 3, references AS-A(190), AS-x1 (200), AS-x2 (201), AS-B (192)) from the first autonomous system (figure 3, reference AS-A (190)) to a destination (figure 3, reference router 145 in AS-B (192)), the first path from the first autonomous system (figure 3, reference AS-A(190)) to the destination including a second autonomous system (figure 3, reference AS-B (192)), the second autonomous system being a next hop of said first path (page 7, paragraph [0160];

means for receiving a second routing message from a peer router of said first router, the second routing message comprising a second path from the first autonomous system to the destination (figure 3, references AS-A (190), AS-x3 (202), AS-x4 (203), AS-B (192)), the second path from the first autonomous system (figure 3, reference AS-A (190)) to the destination being different from the first path from the first autonomous system to the destination, the second autonomous system (figure 3, reference AS-B (192)) also being a next hop of said second path (page 7, paragraph [0160]; and

means for sending a third routing message to one or more internal peer routers of said first router (figure 3, reference 140), said one or more internal peer routers comprised in said first autonomous system (figure 3, references AS-A (190)), the third routing message comprising at least both the first path from the first autonomous system to the destination (figure 3, references AS-A(190), AS-x1 (200), AS-x2 (201), AS-B (192)) and the second path from the first autonomous system to the destination (figure 3, references AS-A (190), AS-x3 (202), AS-x4 (203), AS-B (192)) (page 7, paragraph [0161]).

However, Iwata does not expressly disclose:

means for selecting a best path from said first router to said destination, said best path being selected from a set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message,

wherein said means for selecting the best path comprises:

means for initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message;

means for eliminating from the set of possible best paths any paths which include a route internal to said first autonomous system if there are any paths which do not include a route internal to said first autonomous system in said set of possible best paths;

means for removing from the set of possible best paths any paths that do not have a minimum value of an internal Gateway Protocol cost among the set of possible best paths; and

means for selecting, as the best path, a path that remains in said set of possible best paths after said eliminating step and said removing step.

In an analogous art, Leinwan et al. disclose:

means for selecting a best path from said first router to said destination, said best path being selected from a set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message (figure 1, reference 56, col. 7 lines 50-52),

wherein said step of selecting the best path comprises:

means for eliminating from the set of possible best paths any paths which include a route internal to said first autonomous system if there are any paths which do not include a route internal to said first autonomous system in said set of possible best paths (figure 2, reference step 54, col. 7 lines 40-42);

means for removing from the set of possible best paths any paths that do not have a minimum value of an internal Gateway Protocol cost among the set of possible best paths (figure 2, reference 56, col. 7 lines 50-52); and

means for selecting, as the best path, a path that remains in said set of possible best paths after said eliminating step and said removing step (figure 2, reference 56, col. 7 lines 50-52).

Leinwan et al. disclose wherein said step of selecting, as the best path, a path that remains in said set of possible best paths, comprises selecting a path based on a speaker-number value of a router from which said path was originated (col. 7 lines 47-52 as set forth in claim 20).

One skilled in the art would have recognized the means for selecting a best path from said first router to said destination, and would have applied Leinwan et al.'s selecting a routes for transferring a data packet from the source to the destination in lwata's network paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Leinwan et al.'s method and system for optimizing routing of data packets in lwata's interdomain routing system with the motivation being to select the shortest path (col. 7 lines 50-52).

Furthermore, lwata in view of Leinwan et al. does not expressly disclose means for initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message. In an analogous art, Guerin et al. disclose means for initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are comprised in said third routing message (figure 3, reference-86, page 6, paragraph [0055] lines 2-3).

One skilled in the art would have recognized the means for initializing a set of possible best paths to said set of paths from said first autonomous system to said destination which includes said first path and said second path and which are

comprised in said third routing message, and would have applied Guerin et al.'s initialization procedure in lwata's network paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Guerin et al.'s method and system for topology construction and path identification in a two-level routing domain operated according to a simple link state routing protocol in lwata's interdomain routing system with the motivation being to initialize set of paths from area entry points (page 6 paragraph [0055] lines 2-3).

For claim 21, lwata discloses wherein the packet-based network comprises the Internet (page 7, paragraph [0150] line 2).

For claim 25, lwata discloses wherein the packet-based network comprises the Internet (page 7, paragraph [0150] line 2).

6. Claims 22, 23, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over lwata (US 2002/0051449) in view of Leinwan et al. (US 6,130,890) and Guerin et al. (US 2003/0072270) further in view of Bragg (US 2003/0012145).

For claims 22-23, lwata discloses wherein said first router and said one or more internal peer routers comprised in the first autonomous system are comprised in a set of routers which communicate routes (figure 3, page 7, paragraph [0160-0161]).

However, lwata in view of Leinwan et al. and Guerin et al. does not expressly disclose with use of a route reflection architecture. In an analogous art, Bragg discloses with use of a route reflection architecture (page 1, paragraph [0007]).

Bragg discloses further wherein said first router and said one or more internal peer routers comprised in the first autonomous system are comprised in a set of routers

which communicate routes with use of a full mesh architecture (page 1, paragraph [0007] as set forth in claim 23).

One skilled in the art would have recognized the route reflection architecture, and would have applied Bragg's internal BGP sessions in Iwata's network paths. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Bragg's routing for a communications network in Iwata's interdomain routing system with the motivation being to maintain between all border routers belong to the same AS (paragraph [0007]).

For claim 26, the claim is directed to the same subject matter in claim 22. Therefore, it is subjected to the same rejection.

For claim 27, the claim is directed to the same subject matter in claim 23. Therefore, it is subjected to the same rejection.

Allowable Subject Matter

7. Claim 24 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 1-2, 4-5, 11-12 and 14-15 allowed.

Regarding claims 1 and 11, the prior art fails to teach a combination of the steps of:

wherein the first path and the second path have been selected from a set of paths from the first autonomous system to the destination, each of said paths having said second autonomous system as a next hop thereof, and wherein said first path and

said second path have equal and maximum values of a degree-of-preference attribute among the paths in said set of paths from which the first path and the second path have been selected, equal and minimum values of a length of an autonomous-system-path-attribute among the paths in said set of paths from which the first path and the second path have been selected, and equal and minimum values of a multi-exit-discriminator attribute among the paths in said set of paths from which the first path and the second path have been selected, in the specific combination as recited in the claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-2, 4-5, 9-12, 14-15, and 19-28 have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D. Nguyen whose telephone number is 571-272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TN
TN



HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600